In the claims

1-36. (Cancelled)

37. (Currently amended) A method of inhibiting bone resorption in a mammal in need thereof comprising administering to the mammal an antagonist antibody or binding fragment thereof which binds to an osteoprotegerin binding protein ~~from residues 1 to 317 as shown in Figure 4~~ of ~~(~~SEQ ID NO:39~~)~~.

38. (Cancelled)

39. (Currently amended) The method of Claim 37 wherein the antibody is a monoclonal antibody or binding fragment thereof.

40. (Currently amended) The method of Claim 37 wherein the antibody is a recombinant antibody or binding fragment thereof.

41. (Currently amended) The method of Claim 40 wherein the antibody or fragment is a chimeric antibody or a CDR-grafted antibody or a binding fragment thereof.

42. (Currently amended) The method of Claim 37 wherein the antibody is a human antibody or binding fragment thereof.

43. (Previously presented) The method of Claim 42 wherein the antibody is prepared by immunization of a transgenic animal capable of producing human antibodies.

44. (Currently amended) The method of Claim 37 wherein the antibody or binding fragment thereof binds to an epitope on the extracellular domain or to an epitope on a fragment of the extracellular domain of an osteoprotegerin binding protein.

45. (Previously presented) The method of Claim 44 wherein the epitope comprises the BB' loop of an osteoprotegerin binding protein.

46. (Previously presented) The method of Claim 44 wherein the epitope comprises the EF loop of an osteoprotegerin binding protein.

47. (Currently amended) The method of Claim 37 wherein the antibody or binding fragment further comprises a composition comprising a pharmaceutically acceptable diluent, carrier, solubilizer, emulsifier, preservative and/or adjuvant.

48. (Currently amended) The method of any of Claims 37, 39, 40, 41, 42, 44 or 47 further comprising administering one or more of a bone morphogenic factor ~~(BMP-1 to BMP-12)~~, transforming growth factor-β, a transforming growth factor-β family member, a fibroblast growth factor ~~(FGF-1 to FGF-10)~~, an interleukin-1 inhibitor, a TNFα inhibitor, a parathyroid hormone, an E series prostaglandin, a bisphosphonate, or a bone-enhancing mineral.

49. (Currently amended) The method of any of Claims 37, 39, 40, 41, 42, 44 or 47 wherein bone resorption is associated with a bone disease selected from ~~the group consisting of~~ osteoporosis, osteomyelitis, hypercalcemia, osteopenia brought on by surgery or steroid administration, Paget's disease, osteonecrosis, bone loss due to rheumatoid arthritis, periodontal bone loss, osteopenia due to immobilization, prosthetic loosening and osteolytic metastasis.

50. (Currently amended) The method of Claim 37 wherein the antibody or binding fragment thereof binds to a membrane associated form of osteoprotegerin binding protein.

51. (Currently amended) The method of Claim 37 wherein the antibody or binding fragment thereof binds to a soluble osteoprotegerin binding protein.

52. (Currently amended) A method of inhibiting osteoclastogenesis in a mammal comprising administering to the mammal an antagonist antibody or binding fragment thereof which binds to an osteoprotegerin binding protein ~~from residues 1 317 as shown in Figure 4~~ of ~~(~~SEQ ID NO:39~~)~~.

53. (Cancelled)

54. (Currently amended) The method of Claim 52 wherein the antibody is a monoclonal antibody or binding fragment thereof.

55. (Currently amended) The method of Claim 52 wherein the antibody is a recombinant antibody or binding fragment thereof.

56. (Previously presented) The method of Claim 52 wherein the antibody is a chimeric antibody or a CDR-grafted antibody.

57. (Currently amended) The method of Claim 52 wherein the antibody is a human antibody or binding fragment thereof

58. (Previously presented) The method of Claim 57 wherein the antibody is prepared by immunization of a transgenic animal capable of producing human antibodies.

59. (Currently amended) The method of Claim 52 wherein the antibody or binding fragment thereof binds to an epitope on the extracellular domain or to an epitope on a fragment of the extracellular domain of an osteoprotegerin binding protein.

60. (Previously presented) The method of Claim 59 wherein the epitope comprises the BB' loop of an osteoprotegerin binding protein.

61. (Previously presented) The method of Claim 59 wherein the epitope comprises the EF loop of an osteoprotegerin binding protein.

62. (Currently amended) The method of Claim 52 wherein the antibody or binding fragment thereof binds to a membrane associated form of osteoprotegerin binding protein.

63. (Currently amended) The method of Claim 52 wherein the antibody or binding fragment thereof binds to a soluble osteoprotegerin binding protein.

64. (Currently amended) The method of Claim 52 wherein the antibody or binding fragment further comprises a composition comprising a pharmaceutically acceptable diluent, carrier, solubilizer, emulsifier, preservative and/or adjuvant.

65. (Currently amended) The method of any of Claims 52, 54, 55, 56, 57, 59, 62, 63, or 64 further comprising administering one or more of a bone morphogenic factor ~~(BMP-1 to BMP-12)~~, transforming growth factor-β, a transforming growth factor-β family member, a fibroblast growth factor ~~(FGF-1 to FGF-10)~~, an interleukin-1 inhibitor, a TNFα inhibitor, a parathyroid hormone, an E series prostaglandin, a bisphosphonate, or a bone-enhancing mineral.

66. (Currently amended) The method of any of Claims 52, 54, 55, 56, 57, 59, 62, 63, or 64 wherein osteoclastogenesis is associated with a condition selected from ~~the group consisting of~~ osteoporosis, osteomyelitis, hypercalcemia, osteopenia brought on by surgery or steroid administration, Paget's disease,

osteonecrosis, bone loss due to rheumatoid arthritis, periodontal bone loss, osteopenia due to immobilization, prosthetic loosening and osteolytic metastasis.

67. (Previously presented) The method of Claims 37 or 52 wherein the mammal is a human.

68. (Currently amended) The method of Claims 37 or 52 wherein the antibody is raised against an osteoprotegerin binding protein comprising the amino acid sequence ~~as shown in Figure 4~~ of ~~(~~SEQ ID NO:39~~) from residues 1-317~~ or an immunogenic fragment thereof.

69. (Currently amended) The method of Claim 37 or 52 wherein the antibody is raised against an osteoprotegerin binding protein comprising the amino acid sequence ~~as shown in Figure 4~~ of ~~(~~SEQ ID NO:39~~)~~ from residues 69-317.